



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,342	08/24/2001	Dirk Inze	2283/402	1984

7590

06/03/2003

Ann R. Pokalsky, Esq.
Dilworth & Barrese
333 Earle Ovington Blvd.
Uniondale, NY 11553

EXAMINER

COLLINS, CYNTHIA E

ART UNIT

PAPER NUMBER

1638

10

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,342

Applicant(s)

INZE ET AL.

Examiner

Cynthia Collins

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 8
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group VI, in Paper No. 9 is acknowledged. Upon further consideration, the previous restriction requirement is withdrawn.

Additionally, this application indicates that it is a continuation-in-part of U.S. Serial No. 09/381,150, filed March 13, 2000. As U.S. Serial No. 09/381,150 contains no reference to E2F or DP genes or proteins, the effective filing date for the claimed invention in the instant application is the filing date of the instant application, August 24, 2001.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The oath or declaration does not indicate whether or not priority is claimed under 35 USC 119 to the priority applications listed.

Specification

The abstract of the disclosure is objected to because it is not a single paragraph. The abstract also refers to an invention not currently claimed. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 1638

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 23-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to methods, plant cells and plants wherein the product of any E2Fa gene and any DPa gene are overexpressed, by any method including transformation with a multitude of non-exemplified regulatory genes or other non-E2Fa or non-DPa genes. The claims are also drawn to plant cells and plants which overexpress any E2Fa gene, including a native or heterologous E2Fa gene, and to plant cells and plants which overexpress any E2Fa gene and any DPa gene, including native and/or heterologous E2Fa and DPa genes.

The specification describes methods, plant cells and plants wherein the product of an *Arabidopsis* E2Fa gene and an *Arabidopsis* DPa gene, obtained by PCR from plasmids described in Magyar et al. (FEBS Lett. 486, 79-87, 2000), are transgenically overexpressed (pages 39-42). The specification does not describe or characterize any other E2Fa gene or any other DPa gene, native or heterologous to *Arabidopsis*, whose overexpression affects endoreduplication in a plant or plant part. The specification also does not describe any non-E2Fa or non-DPa gene which somehow modifies the expression of these genes.

The Federal Circuit has recently clarified the application of the written description requirement. The court stated that a written description of an invention "requires a precise definition, such as by structure, formula [or] chemical name, of the claimed subject matter

sufficient to distinguish it from other materials." *University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). The court also concluded that "naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material." *Id.* Further, the court held that to adequately describe a claimed genus, Patent Owner must describe a representative number of the species of the claimed genus, and that one of skill in the art should be able to "visualize or recognize the identity of the members of the genus." *Id.*

Given the claim breadth and lack of guidance as discussed above, the specification fails to provide an adequate written description of the genus as broadly claimed. Given the lack of written description of the claimed product, any method of using it would also be inadequately described. Accordingly, one skilled in the art would not have recognized Applicants to have been in possession of the claimed invention at the time of filing. See Written Description Requirement guidelines published in Federal Register/ Vol. 66, No.4/ Friday January 5, 2001/Notices: pp. 1099-1111).

Claims 23-39 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for increasing endoreduplication in plants by overexpressing an isolated nucleic acid corresponding to the *Arabidopsis* E2Fa gene, and a method of increasing endoreduplication in plants by overexpressing isolated nucleic acids corresponding to the *Arabidopsis* E2Fa and DPa genes, and a method of decreasing endoreduplication in cotyledon pavement cells and increasing endoreduplication in hypocotyl and cotyledon cortical and palisade cells and in mature trichome cells by overexpressing isolated nucleic acids corresponding to the *Arabidopsis* E2Fa and DPa genes, does not reasonably provide enablement

Art Unit: 1638

for methods for modulating endoreduplication by modifying in any way the expression or activity of any E2Fa or any E2Fa and any DPa. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are drawn to methods of modulating endoreduplication in a plant or plant part by modifying in any way the expression or activity of any E2Fa, including methods in which E2Fa is overexpressed in a plant or plant part. The claims are also drawn to methods of modulating endoreduplication in a plant or plant part by modifying in any way the expression or activity of any E2Fa and any DPa, including methods in which E2Fa and DPa are overexpressed in a plant or plant part. The claims are also drawn to plant cells and plants which overexpress any E2Fa gene, including any native or heterologous E2Fa gene, and to plant cells and plants which overexpress any E2Fa gene and any DPa gene, including any native and/or heterologous E2Fa and DPa gene.

The specification discloses the transformation of *Arabidopsis* plants with a vector comprising an isolated nucleic acid encoding the product of an *Arabidopsis* E2Fa gene obtained by PCR from a plasmid described in Magyar et al., (FEBS Lett. 486, 79-87, 2000), and the transformation of *Arabidopsis* plants with a vector comprising an isolated nucleic acid encoding the product of an *Arabidopsis* DPa gene obtained by PCR from a plasmid described in Magyar et al., (FEBS Lett. 486, 79-87, 2000) (pages 39-40). The specification also discloses crossing the transformed *Arabidopsis* plants to obtain plants that comprise both the E2Fa transgene and the DPa transgene (page 40). Additionally, the specification discloses that transgenic *Arabidopsis* plants that comprise the E2Fa transgene in combination with the DPa transgene exhibit decreased endoreduplication in cotyledon pavement cells, and increased endoreduplication in

cortical and palisade cells of the hypocotyl and cotyledon, and in mature trichome cells, as compared to nontransformed control plants (pages 40-41; Figure 1). The specification also discloses that two-week-old seedlings of transgenic *Arabidopsis* plants that comprise the E2Fa transgene alone, or that comprise the E2Fa transgene in combination with the DPa transgene, exhibit overall increased endoreduplication, as compared to nontransformed control plants (pages 41-42). The specification does not disclose other effects on endoreduplication as a consequence of expressing E2F alone or in combination with DP, or any means of modifying E2F or DP activity such that endoreduplication is affected, or other E2F or DP sequences or non-E2F or non-DP sequences whose expression affects endoreduplication in plants.

Guidance for making and using the claimed invention is necessary because the effect of altering the expression or activity of a protein on endoreduplication is unpredictable. Altering endoreduplication is unpredictable because it is a multistep process whose alteration would depend on the presence or absence of factors other than the E2F or DP polypeptide. For example, De Veylder et al. teach that overexpression of the cyclin-dependent kinase inhibitor KRP2 in transgenic plants suppresses endoreduplication in older leaves, but not in younger leaves, in agreement with earlier reports indicating that endoreduplication is developmentally regulated (The Plant Cell, 2001, Vol. 13, pages 1653-1667, see page 1660 column 1 last paragraph through column 2 first full paragraph; page 1162 Figure 9). The activity of E2F is also known to be affected by the presence of retinoblastoma protein (pRB), which in its hypophosphorylated form suppresses the transcriptional activity of E2F (see for example Albani et al., The Journal of Biological Chemistry, 23 June 2000, Vol. 275, No. 25, pages 19258-19267, page 19258 column 2 last full paragraph).

Guidance for making and using the claimed invention is necessary because the specification does not provide sufficient guidance for one skilled in the art to identify other E2F or DP sequences whose expression affects endoreduplication in plants. Known E2F sequences encode proteins having structural differences as well as similarities. The same is true of known DP sequences. For example, Sekine et al. teach that while the tobacco E2F NtE2F shares domains conserved within the mammalian E2F family of proteins, NtE2F lacks a cyclin-binding region along with a basic region which are conserved in the mammalian subfamily with which it shares the most similarity (FEBS Letters, 1999, Vol. 460, pages 117-122, see page 118 Figure 1; page 120 column 2 last paragraph). Albani et al. teach that despite the high conservation of the DNA binding, DP dimerization and marked box domains between the carrot E2F DcE2F and animal E2Fs, the pRB binding domain is poorly conserved, and the region surrounding the pRB domain is not homologous to the activation domain of animal E2Fs (The Journal of Biological Chemistry, 23 June 2000, Vol. 275, No. 25, pages 19258-19267, see page 12264 column 1 first full paragraph). Magyar et al. teach that phylogenetic analysis indicates that two *Arabidopsis* DP proteins, AtDPa and AtDPb, do not group with either of the animal DP protein subfamilies, DP-1 and DP-2, and that the overall amino acid identity between AtDPa and AtDPb is much lower than the overall amino acid identity between the proteins of the DP-1 and DP-2 subfamilies (FEBS Letters, 16 November 2000, Vol. 486, pages 79-87, see pages 80-81 Figure 1; paragraph spanning pages 82-83). Magyar et al. also teach that while human and *Arabidopsis* DP proteins exhibit a similar overall domain organization, both *Arabidopsis* DP proteins are shorter in their C-terminal ends, and neither contain a small sequence region with a high proportion of acidic amino acids as do animal DP proteins. Additionally, AtDPa, but not AtDPb, contains two consensus sites for CDK phosphorylation at its amino terminal end (page 83 column 1 first full

Art Unit: 1638

paragraph). Absent guidance with respect to which aspects of E2F or DP proteins can affect endoreduplication in plants, it would require undue experimentation for one skilled in the art to determine which E2F or DP to express or affect in order to alter endoreduplication in plants.

Given the claim breadth, unpredictability, and lack of guidance as discussed above, it would require undue experimentation for one skilled in the art to determine how to affect endoreduplication by altering the expression or activity of E2F or E2F and DP by any means, including the use of a multitude of non-exemplified non-E2F or non-DP genes, and to determine which E2F's or DP's expression or activity should be altered in order to affect endoreduplication in plants.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23, 24, 25, 26, 27, 28, 29, 30, 31 and 33, and claims dependent thereon, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 and 33 are indefinite in the recitation of "modulating" and "modulated". The terms "modulating" and "modulated" are relative terms, as "modulating" and "modulated" imply a gradual adjustment for keeping a process in proper measure or proportion, for which there is no comparative basis.

Claim 23 is indefinite in the recitation of "modifying the expression or activity of E2Fa". It is unclear what type of modifications are intended, as the expression or activity of E2Fa may be modified in a variety of different ways, such as increased expression, decreased expression,

ectopic expression, enhanced activity, inhibited activity, etc. It is also unclear what activity of E2Fa is modified, as more than one E2Fa activity may be modified, such as DNA binding activity, protein binding activity, etc.

Claims 23, 25, 26, 27, 29, 30 and 31 are indefinite in the recitation of "E2Fa". It is unclear what "E2Fa" is meant to designate, as an acronym may have more than one meaning.

Claim 24 is indefinite in the recitation of "modifying the expression or activity of DPa". It is unclear what type of modifications are intended, as the expression or activity of DPa may be modified in a variety of different ways, such as increased expression, decreased expression, ectopic expression, enhanced activity, inhibited activity, etc. It is also unclear what activity of DPa is modified, as more than one DPa activity may be modified, such as DNA binding activity, protein binding activity, etc.

Claims 24, 26, 28, and 31 are indefinite in the recitation of "DPa". It is unclear what "DPa" is meant to designate, as an acronym may have more than one meaning.

Claims 25-28 and 31 are indefinite in the recitation of "overexpressed" and "overexpressing", as "overexpressed" and "overexpressing" are relative terms that lack a comparative basis.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 23 is drawn to a method which comprises modifying expression or activity of E2Fa, yet claim 23 sets forth no method steps by which this may be accomplished.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 24 is drawn to a method of claim 23 which further comprises modifying

Art Unit: 1638

expression or activity of DPa, yet claim 24 sets forth no method steps by which this may be accomplished.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 25 is drawn to a method of claim 23 wherein E2Fa is overexpressed in a plant or plant part, yet claim 25 sets forth no method steps by which this may be accomplished.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 26 is drawn to a method of claim 24 wherein DPa is overexpressed in a plant or plant part, yet claim 26 sets forth no method steps by which this may be accomplished.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27-39 are rejected under 35 USC 101 because the claimed invention is directed to non-statutory subject matter.

The claims are drawn to plant cells and plants which overexpress an E2Fa gene, including a native or heterologous E2Fa gene, and to plant cells and plants which overexpress an E2Fa gene and a DPa gene, including native and/or heterologous E2Fa and DPa genes. The claims are also drawn to a plant or plant part comprising said cells, progeny of said plant, and plant material obtained from said plant.

Claims 27-39, as written, do not sufficiently distinguish over plant cells and plants as they exist naturally because the claims do not particularly point out any non-naturally occurring products. In the absence of the hand of man, the naturally occurring products are considered non-statutory subject matter. Reference to overexpression alone does not particularly point out any non-naturally occurring products, as the expression of any gene will vary temporally and spatially. Reference to heterologous E2Fa and DPa genes alone does not particularly point out any non-naturally occurring products, as interspecies hybrids occur naturally. See Diamond v. Chakrabarty, 447 U.S. 303, 206 USPQ 193 (1980). The claims should be amended to indicate the hand of the inventor. Furthermore, claims 34-35 should be amended to indicate that the progeny retain the transgene or isolated nucleic acid molecule recited in the newly amended claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-28 and 30-39 are rejected under 35 U.S.C. 102(a) as being anticipated by Magyar et al. (FEBS Letters, 16 November 2000, Vol. 486, pages 79-87).

The claims are drawn to methods of modulating endoreduplication in a plant or plant part by modifying the expression or activity of E2Fa and DPa, including methods in which E2Fa and DPa is overexpressed in a plant or plant part. The claims are also drawn to plant cells and plants

which overexpress an E2Fa gene and a DPa gene, including native and/or heterologous E2Fa and DPa genes.

Magyar et al. teach a method of temporally modifying the expression or activity of *Arabidopsis* E2Fa and DPa, including methods in which *Arabidopsis* E2Fa and DPa is overexpressed in a plant or plant part in relation to their expression in other plant parts or at other times (page 85 Figure 4). Accordingly, Magyar et al. also teach plant cells and plants which overexpress an *Arabidopsis* E2Fa gene and an *Arabidopsis* DPa gene, including native *Arabidopsis* E2Fa and DPa genes. Furthermore, while Magyar et al. do not explicitly teach modulation of endoreduplication, the method taught by Magyar et al. would inherently and necessarily modify endoreduplication, as the method taught by Magyar et al. is identical to the claimed method.

Claims 23, 25, 27, 30 and 32-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Albani et al. (The Journal of Biological Chemistry, 23 June 2000, Vol. 275, No. 25, pages 19258-19267).

The claims are drawn to methods of modulating endoreduplication in a plant or plant part by modifying the expression or activity of E2Fa, including methods in which E2Fa is overexpressed in a plant or plant part. The claims are also drawn to plant cells and plants which overexpress an E2Fa gene, including a native E2Fa gene.

Albani et al. teach a method of temporally modifying the expression or activity of a carrot E2F, including methods in which the carrot E2F is overexpressed in a plant or plant part in comparison with its expression in other plant parts or at other times (page 19262 Figure 4; page 19263 Figure 5). Accordingly, Albani et al. also teach plant cells and plants which overexpress

Art Unit: 1638

an E2Fa gene, including a native E2Fa gene. While Albani et al. do not designate the carrot E2F as an "E2Fa", the designation "E2Fa" does not serve to limit the claims, as "E2Fa" is indefinite under 35 USC 112, second paragraph. Furthermore, while Albani et al. do not explicitly teach modulation of endoreduplication, the method taught by Albani et al. would inherently and necessarily modify endoreduplication, as the method taught by Albani et al. is identical to the claimed method.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albani et al. (The Journal of Biological Chemistry, 23 June 2000, Vol. 275, No. 25, pages 19258-19267) in view of Ramirez-Parra et al. (Nucleic acids Research, 1999, Vol. 27, No. 17, pages 3527-3533).

The claim is drawn to a plant cell which overexpresses the product of a heterologous E2Fa gene.

The teachings of Albani et al. are discussed *supra*.

Albani et al. do not teach overexpression of a heterologous E2Fa gene in a plant cell.

Ramirez-Parra et al. teach the deduced amino acid sequence of an E2F gene obtained from wheat that is heterologous to the carrot cells taught by Albani et al. (page 3529 Figure 1).

Albani et al. additionally teach that heterologous E2F genes from wheat as well as tobacco are known in the art, and that the amino acid sequences of the carrot, wheat and tobacco are conserved in functionally significant regions such as the DNA binding domain and the DP dimerization domain (page 19261 column 1 last paragraph; page 19262 Figure 3). Albani et al. also provide motivation for the transformation of plants to study the role of E2F genes in plants, as transformation studies conducted in animals indicate that at least one animal E2F is dispensable for cell proliferation (page 19266, col. 2, top paragraph).

Given the success of Albani et al. in making a plant cell which overexpresses the product of a homologous E2F gene, given that the product of the carrot E2F gene and the products of other known heterologous E2F genes are structurally conserved in functionally significant regions, and given the desirability of determining the role of E2F genes in plants, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make a plant cell that overexpresses the product of a heterologous E2F gene such as the wheat gene taught by Ramirez-Parra et al. or the tobacco E2F gene, without any surprising or unexpected results, as both DNA sequences encode antibodies. Accordingly, one skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success. Thus, the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time the invention was made.

Remarks

No claim is allowed.

Application/Control Number: 09/938,342

Page 15

Art Unit: 1638

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210.

The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

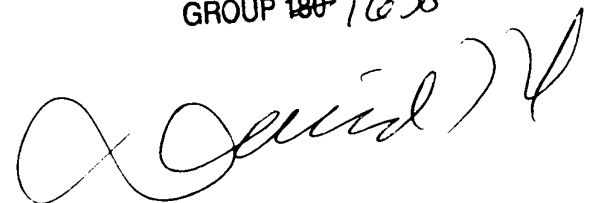
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC

June 1, 2003

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180-1638

A handwritten signature in cursive script, appearing to read "David T. Fox", written over the printed name and title.